What Is Claimed Is:

1. A refrigeration system comprising first and second refrigeration circuits, each refrigeration circuit including a refrigerant, a compressor, a condenser and an evaporator, a fluid conductor in each refrigeration circuit connecting the compressor and condenser in the refrigeration circuit for conveying the refrigerant from the compressor to the condenser, a fluid conductor in each refrigeration circuit connecting the condenser and the evaporator in the refrigeration circuit for conveying the refrigerant from the condenser to the evaporator, and a fluid conductor in each refrigeration circuit connecting the evaporator and the compressor in the refrigeration circuit for conveying the refrigerant from the evaporator to the compressor, a flow regulator located in the fluid conductor connecting the condenser and the evaporator in the first refrigeration circuit for establishing a pressure differential between the condenser and the evaporator in the first refrigeration circuit and regulating the flow of the refrigerant from the condenser to the evaporator in the first refrigeration circuit in response to variations in the heat load at the evaporator in the first refrigeration circuit, and a flow restricting device in the fluid conductor connecting the condenser and the evaporator in the second refrigeration circuit for establishing a pressure differential between the condenser and the evaporator in the second refrigeration circuit and passing the refrigerant in the second refrigeration circuit from the condenser to the evaporator in the second refrigeration circuit at a substantially constant rate of flow.

2. The refrigeration system of claim 1 wherein the evaporators in both refrigeration circuits are incorporated within a common heat exchanger.

3. The refrigeration system of claim 2 wherein the flow regulator in the first refrigeration circuit comprises a thermal expansion valve.

4. The refrigeration system of claim 2 wherein the flow restricting device in the second refrigeration circuit comprises a capillary tube.

5. The refrigeration system of claim 3 wherein the flow restricting device in the second refrigeration circuit comprises a capillary tube.

6. The refrigeration system of claim 1 including a controller for selectively controlling the activation and deactivation of the first and second refrigeration circuits in response to a temperature reference point.

7. The refrigeration system of claim 6 wherein the evaporators of both refrigeration circuits are incorporated within a common heat exchanger.

8. The refrigeration system of claim 7 wherein the flow regulator in the first refrigeration circuit comprises a thermal expansion valve.

9. The refrigeration system of claim 7 wherein the flow restricting device in the second refrigeration circuit comprises a capillary tube.

10. The refrigeration system of claim 8 wherein the flow restricting device in the second refrigeration circuit comprises a capillary tube.

11. In a cooling system comprising first and second cooling circuits, each cooling circuit including a refrigerant, a compressor, a condenser and an evaporator, a fluid conductor in each cooling circuit connecting the compressor and condenser in the cooling circuit for conveying the refrigerant from the compressor to the condenser, a fluid conductor in each fluid circuit connecting the condenser and the evaporator in the cooling circuit for conveying the refrigerant from the condenser to the evaporator and a fluid conductor in each cooling circuit connecting the evaporator and the compressor in the cooling circuit for conveying the refrigerant from the evaporator to the compressor, the method of operating the cooling system comprising the steps of establishing a pressure differential between the condenser and evaporator in the first cooling circuit and regulating the flow of the refrigerant in the first cooling circuit from the condenser to

the evaporator in the first cooling circuit in response to variations in the heat load at the evaporator in the first cooling circuit, and establishing a pressure differential between the condenser and evaporator in the second cooling circuit and passing the refrigerant in the second cooling circuit from the condenser to the evaporator in the second cooling circuit at a substantially constant rate of flow.

12. The method of claim 11 wherein the evaporators of both cooling circuits are incorporated within a common heat exchanger.

13. The method of claim 12 wherein the pressure differential is established in the first cooling circuit and the flow of the refrigerant from the condenser to the evaporator in the first cooling circuit is regulated in response to variations in the heat load at the evaporator in the first cooling circuit by passing the refrigerant through a thermal expansion valve.

14. The method of claim 11 wherein the pressure differential is established in the second cooling circuit and the refrigerant is passed from the condenser to the evaporator in the second cooling circuit at substantially a fixed rate of flow by passing the refrigerant through a capillary tube.

15. The method of claim 13 wherein the pressure differential is established in the second cooling circuit and the refrigerant is passed from the condenser to the evaporator in the second cooling circuit at substantially a fixed rate of flow by passing the refrigerant through a capillary tube.

16. A method of cooling using a cooling system having first and second cooling circuits, comprising the steps of activating the first cooling circuit when the temperature of a space to be cooled is at least as great as a preselected temperature, compressing a refrigerant in a compressor in the first cooling circuit, conveying the compressed refrigerant to a condenser in the first cooling circuit, passing a fluid having a temperature less than the temperature of the compressed

refrigerant in the condenser in the first cooling circuit over a heat exchanger associated with the condenser in the first cooling circuit to cool and liquify the refrigerant in the condenser in the first cooling circuit, conveying the cooled refrigerant from the condenser in the first cooling circuit to an evaporator in the first cooling circuit while lowering the pressure of the refrigerant to allow the refrigerant in the first cooling circuit to expand, passing air from the space to be cooled over a heat exchanger associated with the evaporator in the first cooling circuit to cool the air and recirculating the cooled air to the space to be cooled, returning the refrigerant from the evaporator in the first cooling circuit to the compressor in the first cooling circuit and continuing the foregoing steps in the first cooling circuit until the temperature of the space to be cooled reaches the preselected temperature, activating the second refrigeration circuit when the temperature of the space to be cooled is greater than the preselected temperature by a preselected incremental amount, compressing a refrigerant in a compressor in the second cooling circuit, conveying the compressed refrigerant to a condenser in the second cooling circuit, passing a fluid having a temperature lower than the temperature of the compressed refrigerant in the condenser in the second cooling circuit over a heat exchanger associated with the condenser in the second cooling circuit to cool the refrigerant, conveying the cooled refrigerant from the condenser in the second cooling circuit to an evaporator in the second cooling circuit while lowering the pressure of the refrigerant in the second cooling circuit to allow the refrigerant in the second cooling circuit to expand, passing air from the space to be cooled over a heat exchanger associated with the evaporator in the second cooling circuit to cool the air and recirculating the cooled air to the space to be cooled, returning the refrigerant from the evaporator in the second cooling circuit to the compressor in the second cooling circuit and continuing the foregoing steps in the second cooling circuit until the temperature of the space to be cooled reaches the preselected temperature, regulating the rate of flow of the refrigerant from the condenser to the evaporator in either of the first or second cooling circuits in response to variations in the heat load at the evaporator in the cooling circuit in which the rate of flow of refrigerant is being regulated, and conveying the refrigerant from the condenser to the evaporator in the other of the cooling circuits at a substantially constant rate of flow.

17. The method of claim 16 wherein the evaporators of both cooling circuits are incorporated within a common heat exchanger.

18. The method of claim 17 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator in one of the cooling circuits by passing the refrigerant through a thermal expansion valve in that cooling circuit.

19. The method of claim17 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

20. The method of claim18 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

21. The method of claim 16 wherein the cooling circuit in which the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator in that circuit is the first cooling circuit.

22. The method of claim 21 wherein the evaporators of both cooling circuits are incorporated within a common heat exchanger.

23. The method of claim 22 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator in one of the cooling circuits by passing the refrigerant through a thermal expansion valve in that cooling circuit.

24. The method of claim 22 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

25. The method of claim 23 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

26. The method of claim 16 wherein the cooling circuit in which the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator is the second cooling circuit.

27. The method of claim 26 wherein the evaporators of both cooling circuits are incorporated within a common heat exchanger.

28. The method of claim 27 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator in one of the cooling circuits by passing the refrigerant through a thermal expansion valve in that cooling circuit.

29. The method of claim 27 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

30. The method of claim 28 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

31. The method of claim 16 wherein the number of degrees by which the second incremental amount is greater than the preselected temperature is at least three degrees Fahrenheit.

32. The method of claim 31 wherein the cooling circuit in which the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator is the first cooling circuit.

33. The method of claim 32 wherein the evaporators of both cooling circuits are incorporated within a common heat exchanger.

34. The method of claim 33 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator in one of the cooling circuits by passing the refrigerant through a thermal expansion valve in that cooling circuit.

35. The method of claim 33 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

36. The method of claim 34 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

37. The method of claim 31 wherein the cooling circuit in which the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator is the second cooling circuit.

38. The method of claim 37 wherein the evaporators of both cooling circuits are incorporated within a common heat exchanger.

39. The method of claim 38 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is regulated in response to variations in the heat load at the evaporator in one of the cooling circuits by passing the refrigerant through a thermal expansion valve in that cooling circuit.

40. The method of claim 38 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that cooling circuit.

41. The method of claim 39 wherein the pressure differential is established and the rate of flow of the refrigerant from the condenser to the evaporator is substantially fixed in one of the cooling circuits by passing the refrigerant through a capillary tube in that circuit.